

Dynamical Model of HD 141569

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We present the results of a dynamical model of the debris disk around HD 141569. The model assumes that the features observed in the disk are the result of a fly-by collision of the disk with HD 141569B/C. It includes the effects of gas drag and radiation pressure ($\beta > 1$) on the dust particles, the first time they have been taken into account in models of this system. We show that it is possible to reproduce the large-scale observed density profile by invoking different dust generation histories with different dust generation mechanisms. However, the observed lack of dust close to the star cannot be reproduced without invoking the presence of a planetary-mass companion in an eccentric orbit within 175 AU of the primary.

